

Mixing of the photon with axion and axion-like particles

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Photons can mix with low-mass bosons in the presence of external electromagnetic fields. A known example is the hypothetical axion (spin 0) which can couple with the photon by a two-photon vertex. Other axion-like particles (ALP) have been proposed in many Beyond Standard Model (BSM) theories. In this talk we give a brief overview of the physics of axion and discuss the possibility of detecting axion and axion-like particles in different astrophysical observations and laboratory experiments. Constraints on the parameter space of axion mass and coupling are presented.

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